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A DEFINITION OF CAUSATION. II

PURSUANT to the empirical mode of investigating the causal relation which was explained and defended in the previous paper, we now take up the study of typical cases of causation. Following the outline already given, we consider first the types in the field of Mechanics. This field was divided into three parts: statics, dynamics, and transformation of kinetic into potential energy or the reverse. Under statics were found three principal laws or causal situations, first, that of the transmissibility of forces, second, that of the composition and resolution of forces, and third that of the moment of a force about a point as tending to produce rotation.

1. Cases of Mechanical Causation

Cases in Statics

"*Principle of the Transmissibility of Force.*—When a force acts on a particle, the force will produce the same effect if it be supposed applied at *any* point along a string connected with the particle, the string lying in the line of action of the force."[1] This principle is called an "axiom"; "it is one of the fundamental principles of rational statics, and in most treatises on the subject, it constitutes the basis of the investigation of the conditions of equilibrium" (p. 17). It holds only if the particle acted on remains the same as regards the relative positions of its parts, *i. e.*, if it is a rigid body. Stated in causal terms this means that a force acting at a certain point in a certain direction implies or determines its own existence at all points along that line. For if it were not conceived as already so existing, it could not be assumed at pleasure to be there. This elementary principle is by no means analytically self-evident; it is, in the Kantian sense, a synthetic judgment. Hence it needs explanation. In other words, it is desirable to see by virtue of what properties a force gets this implication. What is the constitution of the whole

[1] G. M. Minchin, "A Treatise on Statics," 5th ed., 1896, page 16.

situation? Let the force act at A in the line AX and the direction from A to X. Then the principle tells us that the force acts at an adjacent point A'. It also tells us that it acts at a point A'' adjacent to A', and at another beyond and adjacent to A'', say A'''—and so on. Only by such a series of points, taken near at will to one another, can the generality of the position of the force along the line be guaranteed. Notice that the series is *started* by two points: the original point of application and the *direction* of the force—for a direction needs two points to determine it. But the universality of the positions of the force is due to the fact that all the positions are members of the series which is thus started.

It is to be remembered that we are not here attempting to deduce the principle of transmissibility, but only to determine the conditions, observed and implied, under which it acts. As we shall meet series analogous to the above in later cases, further examination of it is at present deferred.

Composition of Forces

"If two forces be represented in magnitude, lines of action, and senses by two right lines OA and OB, their resultant is represented in magnitude, line of action, and sense by the diagonal, OC, of the parallelogram $OACB$ determined by these lines."[2]

In order to understand the meaning of this principle, we must ascertain what is meant by a force being "represented" by a right line of finite length. " . . . the magnitude of any force is estimated by the time-rate at which it generates momentum. Nevertheless in statics it is only the *tendency* which forces have to produce motion that is considered. . . . but the magnitude of each force is estimated none the less with reference to the amount of momentum which it would *actually* generate if it were completely unfettered by the action of other forces" (p. 9). The forces, then, which as causes combine to produce another force as effect must be understood as potential rather than actual motions; but their potential character does not prevent them from being actually present. They are in fact regarded as so present, and have different names, such as pressure, tension, attraction, repulsion. Thus, whatever philosophy may have to say of mere potentiality, science at least uses the notion to describe reality.

Next comes the analysis of the cause-effect relation here contained. The principle of composition is proved from the parallelogram of velocities. The latter is a matter of inspection. If a particle move in one second on a board from point A to point B, while the board is being moved so that the line AB passes without change of direction

[2] Minchin, *op. cit.*, page 9.

to the position *CD*, the body has possessed a velocity of *AB* per second and at the same time a velocity of *BD* per second; which is the same as one of *AD* per second. These two velocities are actually united in one body. Hence the forces, which are potential velocities, are also actually united, and without loss of identity on the part of either, into one new force. Superficially this appears to violate the law of contradiction. But it would not do so, even were we dealing with *real* motions; as shall be shown under dynamics. Were that not the case, however, it might still hold in statics: for the forces which combine are not actual motions, but potentialities. The law of contradiction as exemplified in space tells us that one line can not be another line, or one point another point; but it does not in the least imply that a *tendency* acting at one point can not be the same as two other *tendencies* acting at that same point. The law of contradiction tells us nothing at all about it; the whole matter is a question of fact. The concept of causation which is here employed by statics is, then, that of two terms in a certain relation (combination) uniquely determining a third, which is identical with the first two combined. The identity is thoroughgoing in space and time; yet in addition to it there is a difference, *viz.*, the left-hand member determines the right-hand, but not conversely.

Two potentialities may and do combine and produce a third potentiality identical with both yet with an added difference. It is possible to go further: two potentialities which are *entirely opposite in character* may combine to produce a resultant. That resultant is called equilibrium. Even if a body could not move in two opposite directions at once (though dynamics treats it as doing so) yet two opposite *tendencies* can coexist, neither being realized. Equilibrium is a real condition, and is identical with, uniquely determined by, such a coexistence of opposites.

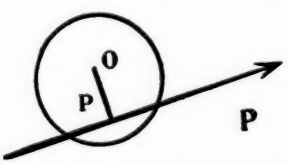
Of course, the concept of potentiality is out of fashion in philosophy just now—except with Thomists, who have always kept a respect for common sense—and must cope with many philosophical objections. It is not our present occupation to deal with them. We wish to know whether and how science *uses* potentiality; and if it finds itself compelled to use it in its causal determinations, that use must be respected, and potential factors must be given as good a title to objective validity as any other causal factors. Our general maxim is, to take what science gives us, and understand it and all that it implies, before we begin philosophical criticism.

Resolution of Forces

"Having proved the principle of the composition of forces, the principle of the resolution of force at once follows."[3] "The force R can be resolved in an infinite number of ways into two other forces" (p. 14). The causation here, however, must be interpreted with care. One force does not of itself give rise to sets of two forces: the pairs are not called resultants, but components. Statistics does not treat this aspect of the matter as a case of causation. Where the result may vary throughout an infinite field, the *Eindeutigkeit* peculiar to causation is lacking: it is rather chance than causation. If any determinate force comes out of the original one, there must be an additional qualification; *one* of the components must be fixed. That being done, the causal structure here is analogous to that of the principle of composition. The cause is twofold, the effect one. There is thoroughgoing identity between cause and effect. The force R being treated from the point of view of its component A is the component B. The subject of this sentence is the cause, the predicate the effect, because the former uniquely determines the latter.

The only reason why we do not like to say that a body tending to fall vertically toward the earth has also a real tendency to move at an angle of 45° with the earth's surface is because usually there is no obvious means of isolating that component. The scientific treatment does not hesitate to say so, when it is desirable in a given problem. The caution perhaps needs to be repeated that we must at present not criticize, but passively receive.

Force as Tending to Produce Rotation

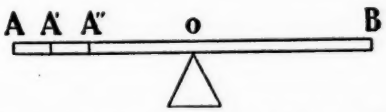


"Let a force P . . . act on a rigid body in the plane of the paper and let an axis perpendicular to this plane pass through the body at any point, O. It is clear, then, that the effect of the force will be to turn the body round this axis (the axis being supposed to be fixed), and the rotatory effect will depend on two things—firstly, the magnitude of the force P, and, secondly, the perpendicular distance, p, of P from O. . . . The product $P \cdot p$ is called the moment of the force about the axis through O."[4]

This is a fundamental statical principle, which seems to be re-

[3] *Op. cit.*, page 13.
[4] *Op. cit.*, page 106.

garded as almost, if not quite, self-evident. The self-evidence does not concern us now; but the way in which it acts does. To simplify matters, let us consider a rigid horizontal bar capable of rotating about a point where it rests on a fulcrum. Suppose a pressure P exerted downward at the end of A. Its moment is $AO \cdot P$. Now how does it happen that this tends to make the bar rotate, *i. e.*, that it communicates an *upward* pressure to the other end, B? This is an elementary case of statical causation, and its constitution must be analyzed.



Let us designate the pressure exerted downward at A by x. The bar is treated as continuous and fairly rigid. This means that x is accompanied by a downward push at an adjacent point A'; if the end of the bar tends to descend, the parts of the bar in its neighborhood tend to go with it. Call the push at A', x'. It is also true that there is a downward push at a point A'' near A, such that it lies between A' and the fulcrum. Call this x''. Proceeding along the bar in this way until we reach the fulcrum, and taking the positions, A, A', A''. . . near at pleasure to one another, we find an endless series of pushes actuating the bar: $x', x'', x''', \ldots$. Abstracting for the moment, after the customary procedure of science, from the fact of the fulcrum and the magnitude of the pushes, we see that each member of this series differs from the next before it only in spatial position. We have, then, the series x, x', x'', x''', . . . where each term after x is similar to the preceding term in a very thoroughgoing fashion. That is, it is similar to it not only in general character as downward push, but in being followed by a term similar to itself. We may for the present purpose describe this series roughly thus: it seems to be determined by a first term x which is followed by the term x' which is in all save position exactly like x. For if this much is granted, x' will have the property which x has, of being followed by another term like itself, *viz.*, x'', which in turn, being like x', will be followed by another x''', and so on. A natural name for this kind of series is a *self-repeater;* it shall later be so designated.

This account neglects the fulcrum and its attendant circumstance, rotation of the bar. The rotation means that the downward push x' is less than x, and x'' is less than x, and so on. For the magnitude of the push is defined by the velocity it gives the body in unit time, and while the point A moves through a certain distance, the point A' moves through less than that distance. The members of the above series have not, then, that all but perfect likeness

above asserted. They differ in magnitude; each being smaller than its predecessor in the ratio of their distances from the fulcrum. This does not effect their likeness in regard to that property of following which holds throughout the series; it simply adds to it by substituting "in all save position and magnitude" in the original description. When the distance from the fulcrum is zero, the downward push has zero magnitude. This does not mean that it is non-existent, for the situation here is one of equilibrium, a resultant of two opposite forces. The downward push is zero because it is really the resultant of a downward push on the fulcrum and the upward push of the fulcrum. When the distance from the fulcrum has a negative value, the magnitude of the downward push also has a negative value proportional to that distance. At B it has a negative value equal to that of A if $AO = -BO$; equal to n/m that of A if $AO = -n/m \cdot BO$.

Lest it seem that we have no right to dub a fact negative, we have to remember the meaning of negative in this connection. It is used in this field to mean of an opposite direction to what is called positive. Of the unreality which is by common cause associated with negation there is, of course, in this usage no trace. Accordingly we can accept as well the statement that an upward push at B added to an equal downward push at B when the arm OB is balanced with OA, constitutes equilibrium at B. It might be considered that two opposite motions of the same body at the same instant can not be: but two opposite simultaneous *tendencies* are, as we have seen, a very different matter, and there is nothing in the nature of space, time, or observed events to forbid the notion. So, at least, the scientific account of the matter thinks.

The whole situation has several distinguishable parts: the downward push of A, the bar joining A and B, the fulcrum, the proportion between push and distance, and the upward push of B. Now is only one of these the cause and one other the effect, or what? Philosophers have puzzled much over this problem of the difference between cause and condition; yet in this case the answer is, I think, a simple one. Let us see what part each element plays in the connection between A and B. The push at A is the starting-point. The series of pushes along the bar forms the connecting link between the starting-point and the end, the upward push of B. The fulcrum, which means the rotation and proportion between push and distance, simply modifies the character of each individual member of the series, without affecting their property of linking A and B. The situation may then be written: push at A—thread of linkage (modified by fulcrum)—push at B. Now the leading-through is done by the middle term, the thread of linkage. This leading is determined, if our description of the series was correct, by two terms, *viz.*, the

push at A and the adjacent push at A' of such a character as to resemble A in all but place and amount. This description in fact really includes the influence of the fulcrum, in the phrase "in all but . . . amount." Accordingly, the last part, the push at B, is completely and uniquely determined by the first two terms of the series (including of course their relation). That alone suffices to guarantee the existence and the character of the push at B.

Since, then, there are, from the point of view of unique determination or explanation, just *two* parts of this whole complex—the determining one being two related terms, the determined one being any term later in the series—there is nothing to do but to consider the former as the cause and the latter the effect. There is here no distinction between cause and condition, unless one of the two related terms be arbitrarily designated cause and the other condition. But this has no ground, since both appear necessary to start the series.

This analysis of statical situations might be considered itself somewhat arbitrary. We have picked out certain elements—mainly spatial ones—and neglected others such as color, kind of substance, time of day, etc. Mach seems to regard this as prejudicial to the objectivity of science.[5] It needs but to recall our present purpose. If science has found its causal explanations by neglecting certain points, we have to accept that fact. It has been able to succeed in its quest by so doing; hence we must conclude that the facts neglected make no essential difference.

All other cases of statical causation, so far as I know, reduce to the above cases and combinations of them. By the principle of composition, such combinations contain in the very fact of being combinations, no new causal principle. They are themselves cases of composition (or resolution). Non-coplanar forces are treated by the aid of the above principles alone. Hydrostatics and the statics of gases, again, involve no new types; ready mobility being the main differentia of these branches. Of course coefficients of friction, resistance of media, density, elasticity, enter into the statical equations: but this is once more a compounding of different causal types, and these latter shall soon be examined on their own merits.

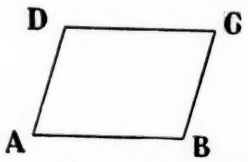
Types of Causation Found in Dynamics

The fundamental types here seem to be the composition and resolution of velocities and accelerations, and the laws of motion. Under the latter belong cases of a body at rest or in uniform motion, of a body acted upon by external forces such as gravitation, and of bodies under impact or collision with other bodies.

[5] "Mechanics," page 9.

Composition and Resolution

The way in which the parallelogram of velocities is constituted has been shown under statics. That of accelerations is completely analogous. Now force in dynamics is represented by the acceleration given to a certain mass. Therefore, forces are compounded and resolved in dynamics just as in statics. In fact, the only reason for discussing this type of case here is that it seemed, according to the treatment above, that only potentialities or tendencies could be compounded without loss or destruction. Thus, if a particle have



acceleration *AB* and also at the same time acceleration *AD*, then in a unit of time it moves through a distance and in a direction which gives it acceleration *AC;* but thereby it reaches point *C*, and not *B* nor *D*. Hence the forces represented by accelerations *AD* and *AB* seem not to have been actually realized.

It all depends upon what we mean by a force. Two ways of interpreting it are possible; and on one of these ways the composition and resolution become fictions, on the other truth. A force may be through and through particular, defined by a particular point of application, a particular magnitude, a particular direction; or it may have something of the universal in its nature, which permits it to be transferred or transmitted from one place to another while remaining the same force. These two interpretations are *a priori* possible; but science in its empirical procedure has adopted the second. It speaks of forces being transmitted, and treats them as if they were transmitted; just as it speaks of velocity being transferred, momentum imparted, etc. Indeed it is not science that is nominalistic, but certain philosophic views *about* science. Suppose now we take this universalist interpretation of a force: then a force may itself be translated through space while remaining just itself. The force which imparts acceleration *AC is* that force which gave acceleration *AD*, its point of application being translated with acceleration *AB*. It has shifted its point of application, but has retained the same direction and magnitude. It has moved the particle from *A* in the direction *AD* by the amount *AD;* for the point *D* is actually removed by that amount and in that direction from *A*. If it be objected that in dynamics a force is not an entity in itself, but simply the acceleration of a mass, the same argument holds; for the basis of it is that accelerations may be compounded. The only ground for rejecting real composition seems to be that a line, considered by

itself, *is not* two other lines. But a line, considered in relation to other lines or points, may have a property that it has not when considered alone, *viz.*, the property of leading in different directions according to the lines with reference to which it is considered.

Accordingly the law of composition implies a true identity between the forces (accelerations, velocities) which combine and the resultant force. The structure of the causal relation is the same as in the corresponding case of statics.

A special case is that of two equal and opposite forces. This seems at first to be a *reductio ad absurdum* of the principle, inasmuch as the resultant is zero. How can zero be identical *in dynamics* with two real forces (accelerations, velocities)? Now in statics this was, as we have seen, perfectly possible; for *there* we had only potentialities, tendencies, not actual motion. But in dynamics, where there is no motion there is force. Hence we either pass in this case into statics—kinetic energy becoming potential, as in a body propelled upward against gravitation—or into some other form of energy than either, as when impact of inelastic bodies gives rise to heat. These cases shall be later examined; but even now it is evident that the effect of two opposite forces never is *merely* zero acceleration.

The resolution of forces is analogous to the same in statics.

It may here be asked, why do we not include a principle corresponding to that of rotation in statics? For perfect symmetry it ought to be done. But the structure of the causal situation is obviously the same as that of the statical principle; so we pass it entirely over.

Inertia and Rectilinear Motion

There has been a great deal of discussion as to the proper formulation of Newton's laws; but it is our good fortune at present to be able to avoid it. The nature of our problem enables us to take the statement of any standard text-book, treating it as *very nearly* what happens in the actual world. The first law says:

"A body continues in its state of rest, or of straight uniform motion, except in so far as it is compelled to alter that state by impressed force."[6]

The direct implication is that a body, being at one moment in a state of rest will, if the forces acting on it remain the same, be in the same state at a later moment; and similarly if it be in straight uniform motion for one period of time it will, if other conditions acting on it remain, etc., have the same straight uniform motion at

[6] Williamson and Tarleton, "Dynamics," London, 1889, page 25.

a later period. Its earlier state determines its later state; the later state is accounted for by the law which connects it with that earlier state. It might conceivably have been otherwise. Bodies might begin to move of themselves, or to stop of themselves; this was indeed a primitive belief. But they do not. Why? It is not self-evident, or an analytic judgment, though such a view has been defended; for time goes on and other things change while a certain body remains (nearly) at rest in a given system. But even if it were self-evident, it is a type of the behavior of bodies in which the earlier state is by science believed to determine the later. That is, it is a causal situation.

If a body is at rest in a given system (or in the universe, as defenders of absolute motion would say) for a given period of short duration, then at a slightly later period, with the same duration, it is at rest, and also at another similar period, later by the same difference than the second. If difficulties are here raised by the terms "same duration" and "same difference" the reply is that we mean by them just what they are used in dynamics and physics to mean. This series we have begun continues indefinitely in time. Denote the body throughout the first period by x, throughout the second by x', and so on. Then the series is defined by the following: a term x is followed by another x' which resembles it in all save position, and is therefore followed by a similar term x''. The series thus begun will go on indefinitely, just as, to use Royce's illustration, a map of England in England implies a map within itself, and so on. This is moreover an *adequate* description of the series which defines this case of inertia. For it holds, however small the successive periods become, and however near together, and it holds through the whole time. The causal structure here is analogous to that of transmission of pressure along a rigid bar rotating about a fulcrum, in statics.

If a body is in uniform motion in a straight line, the terms of the series become equal displacements in equal times; otherwise the series is the same. However short the motion is, it has been repeating itself indefinitely often.

The question of relativity of motion, time, space is indifferent to this analysis. If a body's motion is uniform in a given system then, other conditions being unaltered, it continues uniform in that system. The fact that a line which is straight in one perspective is sometimes not so in another is also irrelevant, provided the same perspective is maintained. A uniform circular motion, or spiral motion, continues uniform and of the same kind (circular, spiral) so long as the conditions are unchanged; being a compound motion, the resultant of two or more which are uniform. A uniform accelera-

tion, which is the combination of an original motion with a constant force (as in gravitation) continues uniform while the conditions are unchanged (*i. e.*, distance from the center of mass of the earth). We need not discuss the question, whether all forces *must* be defined by straight lines. This is claimed by some,[7] but its necessity lies beyond the scope of our problem. Dynamics and physics *do* so define it and thereby succeed in explaining their phenomena; here we only take passively what these sciences give us.

A certain *reductio ad absurdum* here appears. The endlessly repeating series must by its very definition go on forever; but rest and motion of the bodies we know, do not go on forever. But, as the treatment of impact and of some later types will show, *momentum is* always conserved; that is, the same amount of motion of the same mass. When a resting body is moved, the rest becomes force of inertia or tendency to resist motion; a real and measurable condition, though only a potentiality. When a moving body is stopped or turned in another direction, the motion in the original direction continues, either as element of a composition of motions, or as transferred without loss to some other body, or as internal motion in the shape of heat.

As to the concept of mass here used, it is not necessary to assume that it represents quantity of matter. It may be defined, as Mach and others claim, by means of acceleration produced in other bodies. The conservation of mass is an empirical result, and is unaltered by conceptual analysis. It is *found* that the total power of producing accelerations in a given body remains unaltered by change of position or spatial configuration. Perhaps, as Natorp, Wundt, Meyerson, and others suggest, this is *a priori* necessary, because space by its very definition would be incapable of affecting mass. But we have here no concern with attempts to prove any causal process *a priori* necessary. In the sequel the question of necessity must be discussed; at present our task is only to understand what causation is.

The Case of a Body Acted Upon by External Forces and Consequently Changing Its Motion (or Rest).

If the force acting on the body is uniform (or nearly so) and continues acting indefinitely, as is the case in gravitation, the velocity given the body in a short period of time is simply added to that rate of motion it had just before. The series of short successive periods is then composed of members each of which has a constant numerical ratio to the one before it; x is followed by x' which is just so much greater than x, and x' resembles x otherwise in all but its

[7] E. Meyerson, "Identité et Réalité," page 76.

position in the series; *i. e.*, x' is followed by x'' which again is greater by the same ratio than x' — and so on. The type of causation is the same as before. Here the force of gravitation is spoken of as the cause; but little, if anything, is known of the way in which this force arises and influences the motion of bodies. Hence we must confine our attention to the way in which the motion of bodies goes on under the influence of this force; regarding the earlier displacement, velocity, acceleration, as, under that influence, determining the later displacement, etc.

With an *impulsive* force, whose action ceases almost instantaneously, the series of conditions *after* its action has ceased is one of uniform motion. The *communication* of the impulse may occur in any manner, and consequently will come under one of the types of causation later discussed. One of these is taken up in the next section.

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VALUE AND EXISTENCE IN ART AND IN RELIGION[1]

BETWEEN the profound and the commonplace the difference is obscurity of statement: a profundity is a commonplace formulated in strange or otherwise unintelligible terms. This must be my excuse for beginning with the trite remark that the world we live in is not one which was made for us, but one in which we happened. I say this with all due deference to idealists and other pious persons who believe that the trouble is only with us, and not at all with the world, and I wish I could agree with them. I can't, because for one reason, if the world were actually as they think it, they could not think it as they do. Indeed, they could not think. For thinking arises always as reaction to discomfort, to pain, to uncertainty, to problems, and these could not exist in a world which was made for us. It is notable that those who believe it to be such devote most of their thinking to explaining the discrepancy between the world's seeming and the world's being. Their chief business, after proving that the world is all good, is solving "the problem of evil." Now if really there were no evil, this evil consequence could not have ensued: existence would have been a beatitude and not an adjustment, and thinking would have been self-absorbed contemplation, blissful intuition, not painful learning by the method of trial and error.

[1] Read at the annual meeting of the American Philosophical Association, 1913.

What "might have been" does not, however, become, by force of a discursive demonstration that goodness alone exists and is real, and that hence evil is non-existence, unreality, appearance. The appearance of evil is in so far forth no less an evil and the best witnesses to its reality are the historic attempts to explain it away. For this appearance has a definite and inexpugnable character of its own, even as appearance, which can not be destroyed by subsumption under the "standpoint of the whole," "the absolute good," the "over-individual values"; and it can not be abolished by the epithet "appearance." To deny reality to evil only intensifies the evil, since it makes two "problems" grow where only one grew before and serves no end as a solution of the real problem how evil *can* be effectively abolished.

Because of these considerations I hold myself safe in assuming that the world we live in was not made for us, and is, humanly speaking, open to improvement in a great many directions. It will be comparatively innocuous also to assume as a corollary that in so far as the world was made for mind, it has been made so by man: civilization is the adaptation of nature to human nature. And as a second corollary it may be safely assumed that the world does not stay made: civilization has brought its own problems and peculiar evils.

All this apparently irrelevant talk is intended to suggest that the "problem of evil" can perhaps be best understood in the light of another problem: the problem, namely, of why men have created the problem of evil. For it is obvious that evil can be problematic only in an absolutely good world, and the idea of an absolutely good world is not a generalization *upon* experience, but a contradiction *of* experience. If there is a metaphysical "problem of values," hence, that problem may be restated as the "problem of why men contradict their own experience."

The problem so put suggests its own solution: first of all, that nature and human nature are not compatible; that, consequently, conclusions are being forced by nature on human nature which human nature resents and rejects; and that traits are being assigned to nature by human nature which nature does not possess, but which, if possessed, would make it congenial to human needs. All this is so platitudinous that I feel ashamed to say it, but then, how can one avoid platitudes without avoiding truth? And truth here is that what is called value has its seat necessarily in human nature, and that what is called existence has its seat necessarily in nature, of which human nature is a part, and apart. Existence, hence, is by no necessity a content of value. Non-human existence becomes valuable by its bearing on humanity, and value is relation to conscious-

ness, *is* consciousness.[2] Existence is wider than consciousness and independent of it: where consciousness exists value exists, but where existence occurs value need not and in most cases does not occur. Value is a specific kind of existence among other existences. When it is said that value is non-existent nothing more is meant than that the nature of value is not coincident and coexistent with the nature of other existences, just as when it is said that a thing is not red, the meaning is that red is not copresent with other qualities. Conversely, value may be said to be existent in nature when nature and human nature, mind, are in any respect harmonious or identical. What human nature tries to force upon nature must be, by implication, non-existent value, so that the nature of value must be held inseparable from the nature of mind.

It follows that value is, in origin and character, completely irrational. At the foundations of our existence it is the relation between their objects and our major instincts, our appetites, our feelings, our desires, our ambitions,—most clearly, the self-regarding instinct and the instincts of nutrition, reproduction, and gregariousness. Concerning them, as William James writes, "Science may come and consider their ways and find that most of them are useful. But it is not for the sake of their utility that they are followed, but because at the moment of following them we feel that that is the only appropriate and natural thing to do. Not one man in a billion, when taking his dinner, ever thinks of utility. He eats because the food tastes good and makes him want more. If you ask him *why* he should want to eat more of what tastes like that, instead of revering you as a philosopher, he will probably laugh at you for a fool. The connection between the savory sensation and the act it awakens is for him absolute and *selbstverständlich*, an *a priori* synthesis of the most perfect sort, needing no proof but its own evidence. . . . To the metaphysician alone can such questions occur as 'Why do we smile when pleased, and not scowl? Why are we unable to talk to a crowd as we talk to a single friend? Why does a particular maiden turn our wits upside down?' The common man can only say '*of course* we smile, *of course* our heart palpitates at the sight of a crowd, *of course* we love the maiden, that beautiful soul clad in that perfect form, so palpably and flagrantly made from all eternity to be loved.' And so, probably, does each animal feel about the particular things it tends to do in the presence of particular objects. . . . To the broody hen the notion would probably seem monstrous that there should be a creature in the world to whom a nestful of eggs was not the utterly fascinating and precious and never-to-be-too-much-sat-upon object it

[2] *Cf.* my paper "Goodness, Cognition, and Beauty," this JOURNAL, Vol. IX., page 253.

is to her." In sum, fundamental values are relations, responses, attitudes, immediate, simple, subjectively obvious, and irrational. But everything else becomes valuable or rational only by reference to them.

Study them or the others empirically,[3] and they appear as types of specific behavior, simple or complicated, involving a strong emotional tone, and aggregates of connected ideas, more or less systematized. In the slang of the new medical psychology which has done so much to uncover their method and mechanism, they are called "complexes"; ethics has called them interests, and that designation will do well enough. They are the primary and morally ultimate efficacious units of which human nature is constituted, and it is in terms of the world's bearing upon their destiny that we evaluate nature and judge her significance in worth.

Now in interest, the important thing is emotional tone. Whatever else is sharable, that is not. It is the very stuff of our attitudes, our acceptances and rejections of the world and its contents, the very essence of the relations we bear to these. That these relations shall be identical for any two human beings requires that the two shall be identical: two persons can not hold the same relation to the same or different objects any more than two bodies can occupy the same space at the same time. Hence, all our differences and disagreements. Mere numerical density compels us to act as separate centers, to value things with reference to separate interests, to orient our worlds severally, and with ourselves as centers. This orienting is the relating of the environment to our interests, the establishment of our worlds of value. However much they may cross and interpenetrate, coincide they never can.

Our interests, furthermore, are possibly as numerous as our reflex arcs. Each may, and most do, constitute distinct and independent valuations of their objects, to which they respond, and each, with these objects, remains an irreducible system. But reflex arcs and interests do not act alone. They act like armies; they are integrated, and when so integrated their valuations fuse and constitute the more complex and massive feelings, pleasures and pains, the emotions of anger, of fear, of love; the sentiments of respect, of admiration, of sympathy. They remain, through all degrees of complexity, appraisements of the environment, as subject to empirical examination by the psychologist as the environment itself by the physicist.

With a difference, however, a fundamental difference. When you have an emotion you can not yourself examine it. Effectively as the

[3] *Cf.* Thorndike, "The Original Nature of Man"; S. Freud, "Die Traümdeutung, Psychopathologie des Alltagsleben," "The Origin and Development of Psycho-analysis," etc.; McDougall, "Social Psychology."

mind may work in sections, it can not with sanity be divided against itself nor long remain so. A feeling can not be had and examined at the same time. And though the investigator who studies the nature of red does not become red, the investigator who studies the actual emotion of anger does tend to become angry. Emotion is infectious; anger begets anger; fear, fear; love, love; hate, hate; actions, relations, attitudes, when actual, integrate and fuse: to know them is to have them, while to know things is simply to have a relation to them. The same object may be both loved and hated, desired or spurned, by different minds at the same time or by the same mind at different times. One, for example, values whiskey positively, approaches, absorbs it, aims to increase its quantity and sale; another apprehends it negatively, turns from it, strives to oust it from his world. Then according to these direct and immediate valuations of whiskey, its place in the common world of the two minds will be determined. To save or to destroy it, they may seek to destroy each other. Even similar positive valuation of the object might imply this mutual repugnance and destruction. Thus, rivals in love: they enhance and glorify the same woman, but as she is not otherwise sharable, they strive to eliminate each other. Throughout the world of values the numerical difference of the seats or centers of value, whatever their identity otherwise, keeps them ultimately inimical. They may terminate in a common object, but they originate in different souls and they are related to the object like two magnets to the same piece of iron that lies between them. Most of what is orderly in society and in science is the outcome of the adjustment of just such oppositions: our civilization is an unstable equilibrium of objects, through the cooperation, antipathy, and fusion of value-relations.

Individuals are no better off; personality is constructed in the same way. If, indeed, the world had been made for us, we might have been spared this warfare to man upon earth. Life might have been the obvious irrational flow of bliss so vividly described by William James, nature and human nature would have been one; bridging the gulf between them would never have become a task for the tender-minded among philosophers. Unfortunately our mere numerical difference, the mere numerical difference of the interests which compose our egos, makes the trouble, so that we are compelled to devote most of our lives to *converting* the *different* into the *same*. The major part of our instincts serve this function recognizably, *e. g.*, nutrition, and the "higher powers" do so no less, if not so obviously. Generalization is nothing more, thinking nothing else. It is the assimilation of many instances into one form, law, or purpose; the preservation of established contents of value, just as nutrition is the preservation of life by means of the conversion of foreign

matter into the form and substance of the body. By bowels and by brain, what is necessary, what will feed the irrationally given interest, is preserved and consumed: the rest is cast off as waste, as irrelevance, as contradiction.

And this is all that a mind is—an affair of saving and rejecting, of valuing with a system of objects of which a living body and its desires and operations, its interests, are focal and the objects marginal, for its standard. Mind, thus, is neither simple, nor immutable, nor stable; a thing to be "changed," "confused," "cleared," "made-up," "trained." One body, I have written elsewhere,[4] "in the course of its lifetime, has many minds, only partially united. Men are all too often "of two minds." The unity of a mind depends on its consistent pursuit of *one* interest, although we then call it narrow; or on the cooperation and harmony of its many interests. Frequently two or more minds may struggle for the possession of the same body, that is, the body may be divided between two elaborately systematized tendencies to act. The beginning of such a division occurs wherever there is difficulty in deciding between alternative modes of behavior: the end is to be observed in those cases of dual or multiple personality in which the body has ordered so great a collection of objects and systematized so large a collection of interests in such typically distinct ways as to have set up for itself different and opposed "minds." On the other hand, two or fifty or a million bodies may be "of the same mind."

Unhappily, difference of mind, diversity and conflict of interests, is quite as fundamental, if not more so, as sameness of mind, cooperation and unity of interests. This the philosophic tradition sufficiently attests. To Plato man is at once a protean beast, a lion, and an intellect; the last having for its proper task to rule the first and to regulate the second. According to the Christian tradition man is at once flesh and spirit, eternally in conflict with one another, and the former is to be mortified that the latter may have eternal life. Common sense divides us into head and heart, never quite at peace with one another. There is no need of piling up citations. Add to the inward disharmonies of mind its incompatibilities with the environment, and you perceive at once how completely it is, from moment to moment, a theater and its life a drama of which the interests that compose it are at once protagonists and directors. The catastrophe of this unceasing drama is always that one or more of the players is driven from the stage of conscious existence. "It may be that the environment—social conditions, commercial necessity, intellectual urgency, allies of other interests—will drive it off; it may be that its own intrinsic unpleasantness will banish it, will put

[4] This JOURNAL, Vol. IX., page 256.

it out of the mind; whatever the cause, it is put out. Putting it out does not, however, end the drama; putting it out serves to complicate the drama. For the 'new psychology' shows that whenever an interest or a desire or impulsion is put out of the mind, it is really, if not extirpated, put into the mind; it is driven from the conscious level of existence to the unconscious. It retains its force and direction, only its work now lies underground. Its life henceforward consists partly in a direct oppugnance to the inhibitions that keep it down, partly in burrowing beneath and around them and seeking out unwonted channels of escape." Since life is long suppressions accumulate, the mass of an existence of feeling and desire tends to become composed entirely of these suppressions, layer upon layer, and every interest in the aggregate striving to attain place in the daylight of consciousness.

Now empirically and metaphysically, no one interest is more excellent than any other. Repressed or patent, each is either in a completely indifferent universe, or before the bar of an absolute justice or under the domination of an absolute and universal good, entitled to its free fulfilment and maintenance. Each is a form of the good; the essential content of each is good. That any are not fulfilled, but repressed, is a fact to be recorded, not an appearance to be explained away. And it may turn out that the existence of the fact may explain the effort to explain it away. For where interests are in conflict with each other or with reality, and where the loser is not extirpated, its revenge may be just this self-fulfilment in *unreality*, in idea, which philosophies of absolute value offer it. Dreams, some of the arts, religion, and philosophy may indeed be considered as such fulfilments, worlds of luxuriant self-realization of all that part of our nature which the harsh conjunctions with the environment overthrow and suppress. They are ideal reconstructions of the surrounding evil of the world into forms of the good. In them humanity has its freest play and amplest expression.

This is most specifically true of philosophy. The environment with which philosophy concerns itself is nothing less than the whole universe; its content is, within the history of its dominant tradition, absolutely general and abstract; it is, of all great human enterprises, even religion, least constrained by the direction and march of events, the mandate of circumstance. Like music, it expresses most truly the immediate and intrinsic interests of the mind, its native bias and its inward goal. It is constituted, for this reason, of the so-called "normative" sciences, envisaging the non-existent as real, forcing upon nature pure values, forms of the spirit incident to life in this world, unmixed with baser matter. To formulate ultimate standards, to be completely and utterly lyrical is the prerogative of phil-

osophy alone. As these standards reappear in all other reconstructions of the environment and most clearly in art and in religion, it is pertinent to ennumerate them, and to indicate briefly their bearing on existence.

It is obvious that to a mind constituted as is the human mind a fundamental normation must be *unity*. The history of philosophy from Thales to Bergson is significantly unanimous in its attempts to prove that the world is, somehow, through and through one. That the oneness requires *proof* is *prima facie* evidence that it is a value, a desiderate, not an existence. And how valuable it is may be seen merely in the fact that it derealized the inner conflict of interests, the incompatibilities between nature and man, the uncertainties of knowledge, and the certainties of evil, and substitutes therefor the ultimate happy unison which the identity of the different compels.

Unity is the common desiderate of philosophic systems of all types, neutral, materialistic, idealistic. But the dominant tradition has tended to think this unity in terms of *interest*, of *spirit*, of *mentality*. It has tended, in a word, to assimilate nature to human nature, to identify things with the *values* of things, to envisage the world in the image of man. To it, the world is all spirit, ego, or idea; and if not such through and through, then entirely subservient, in its unhumanized parts, to the purposes and interests of ego, idea, or spirit. Why, is obvious. A world of which the substance is such is a totality of interest and purpose which faces no conflict and has no enemy. It is fulfilment even before it is need, and need, indeed, is only illusion. Again, mind is more at home with mind than with things: the pathetic fallacy is the most inevitable and the most general. Although the totality of spirit is conceived as good, that is, as actualizing all our desiderates and ideals, it would still be felt, that, even if the totality were evil, and not God, but the Devil ruled the roost, the world so constituted is a better world than one utterly non-spiritual. We can understand and be at home with malevolence: it offers at least the benefits of similarity, of companionship, of intimateness; but no horror can be greater than that of utter aliency. How much of religion turns with a persistent tropism to the consideration of the devil and his works, and how much it has fought his elimination from the cosmic scheme! And the philosophic tradition, though it has cared less for the devil, has predominantly repudiated aliency.

That *eternity* shall be used to complete unity and spirituality as cosmic desiderates follows from its nature. In content either a meaningless negation, not-time, of the same character as not-man or not-donkey, or a designation of the persistence of quality, it is at bottom the assurance that value-forms can not and will not be altered

in character and in relation to man. There is no recorded attempt to prove that evil is eternal: eternity is *eternity of the good alone.*

Unity, spirituality, and eternity, then, are the value-forms which the dominant philosophic tradition designates as the foundation and metaphysical reality of universal nature. Of man, it posits *immortality* and *freedom,* and even materialistic systems have in some form tended to conserve these goods. For the desiderative character of immortality, no argument is necessary. With freedom, however, the case is different. The controversy over "free-will," the casuistic entanglement of this ideal with the notion of responsibility, and its theological development in the problem of the relation of an omnipotent god to a recalcitrant creature, have so much obscured its primal significance that it is worth while pointing out how esentially the ideal of freedom is compensatory. It is an ideal that could have arisen only in the face of *obstruction to action* directed toward fulfilling and satisfying interests. Even deterministic solutions of the artificial "problem of freedom" are in fact nothing more than the removal of obstructions. Spinoza's solution is typical, and its form is that of all idealisms as well. It ensues by way of identification of the obstruction's interests with those of the obstructee: the world becomes the ego or the ego the world, with nothing outside to hinder or to interfere. In the absolute existence is value *de facto;* in fact, *de jure.*

Is any proof necessary that these value-forms are not the contents of the daily life? If it is, why this unvarying succession of attempts to prove that they *are* the contents of the daily life, that goes by the name of history of philosophy? In fact, experience as it comes from moment to moment is not one, harmonious and orderly, but multifold, discordant, and chaotic. Its stuff is not spirit, but stones and railway wrecks and volcanoes and Mexico and waters and trees and stars and mud. It is not eternal, but changes from instant to instant and from season to season. Actually, men do not live forever; death is a fact, and immortality is literally as well as in philosophic discourse not so much an aspiration for the continuity of life as an aspiration for the elimination of death, purely immortality. Actually the will is not free, each interest encounters obstruction, no interest is completely satisfied, all are ultimately cut off by death.

Such are the general features of all human experience, by age unwithered, and with infinite variety forever unstaled. The traditional philosophic treatment of them is to deny their reality, to call them appearance, and to satisfy the generic human interest which they oppose and repress by means of the historic reconstruction in imaginative dialectic of a world constituted by these most generalized

value-forms and to eulogize the reconstruction with the epithet "reality." When, in the course of human events, such reconstruction becomes limited to the biography of particular individuals, is an expression of their concrete and unique interests, is lived and acted on, it is called paranoia. The difference is not one of kind, but of concreteness, application, and individuality. Such a philosophy applied in the daily life is a madness, like Christian science: kept in its proper sphere, it is a fine art, the finest and most human of the arts, a reconstruction in discourse of the whole universe, in the image of the free human spirit. Philosophy is reasonable because it is so unpersonal, abstract, and general, like music; because, in spite of its labels, its reconstructions remain *sure* desiderates and value-forms and are *not* confused with and substituted for existence. But philosophers often have the delusion that the substitutions are actually made.

It is the *purity* of the value-forms imagined in philosophy that makes philosophy normative. The arts, which it judges, have an identical origin and an indistinguishable intent, but they are properly its subordinates because they have not its purity. They, too, aim at remodeling discordant nature into harmony with human nature. They, too, are dominated by value-forms which shall satisfy as nearly as possible all interests, shall liberate and fulfil all repressions, and supply to our lives that unity, eternity, spirituality, and freedom, of our central desire. But where philosophy merely negates the concrete stuff of experience and defines its reality in terms of desire alone, the arts acknowledge the reality of immediate experience, accept it as it comes, eliminating, adding, molding, until the values desiderated become existent *in* the concrete immediacies of experience as such. Art does not substitute values for existences by changing their rôles and calling one *appearance* and the other *reality:* art converts values into existences, it realizes values, injecting them into nature as far as may be. It does not claim for its results greater reality than nature's. It claims for its results greater immediate harmony with human interests than nature. The propitious reality of the philosopher is the unseen: the harmonious reality of the artist must be sensible. Philosophy says that apparent actual evil is merely apparent: art compels potential apparent good actually to appear. Philosophy realizes fundamental values transcendentally, beyond experience: art realizes them immediately within experience.

How completely it does so descriptions of the esthetic encounter make clear. The artist's business is to create the other object in the encounter, and this object, in Miss Puffer's words, is such that "the organism is in a condition of repose of the highest possible tone, functional efficiency, enhanced life. The personality is brought into

a state of unity and self-completeness." The object, when apprehended, awakens the active functioning of the whole organism directly and harmoniously with itself, cuts it off from the surrounding world, shuts that world out, and forms a complete, harmonious, and self-sufficient system, peculiar and unique in the fact that there is no passing from this deed into further adaptation with the object. Struggle and change are at an end, and whatever activity now goes on feels self-conserving, spontaneous, free. The need of readjustment has disappeared, and with it the feeling of strain, obstruction, and resistance which is its sign. There is nothing but the object, and that is possessed, completely, satisfyingly, and as if forever. Art, in a word, supplies an environment from which strife, foreignness, obstruction, and death are eliminated. To this environment the mind finds itself completely and harmoniously adapted by the initial act of perception. In the world of art, value and existence are one.

If art may be said to create values, religion has been said to conserve them. But the values conserved are not those created: they are the values postulated by philosophy as metaphysical reality. Whereas, however philosophy substitutes these values *for* the world of experience, religion makes them continuous with the world of experience. For religion value and existence are on the same level, but value is more potent and environs existence, directing it for its own ends. The unique content of religion, hence, is a specific imaginative extension of the environment with value-forms: the visible world is extended at either end by heaven and hell; the world of minds, by God, satan, angels, demons, saints, and so on. But where philosophy imaginatively abolishes existence in behalf of value, where art realizes values *in* existence, religion tends to control and to escape the environment which exists by means of the environment which is postulated. The aim of religion is salvation from sin. Salvation is escape from experience to heaven and the bosom of God: while hell is the compensatory readjustment of inner quality to outer condition for the alien and the enemy, without the knowledge of whose existence life in heaven could not be complete.

In religion, hence, the conversion of the repressed array of interests into ideal value-forms is less radical and abstract than in philosophy, and less checked by fusion with existence than in art. Hence religion is at the same time more carnal and less reasonable than philosophy and art. Its history and protagonists exhibit a closer kinship to what is called insanity—that being, in essence, the substitution in actual life of the creatures of the imagination which satisfy the repressed needs for those of reality which repress them. It is a somnambulism which intensifies rather than abolishes the contrast between what is desired and what must be accepted. It offers itself

rather as a *refuge* from reality than a control of it, and its development as an institution has turned on the creation and use of devices to make this escape feasible. For religion, therefore, the perception that the actual world, whatever its history, is now not adapted to human nature, is the true point of departure. Thus religion takes more account of experience than compensatory philosophy; it does not derealize existent evil. The outer conflict between human nature and nature, the inner conflict between the interests that constitute human nature, are expressed in the idea of *sin*. The desired abolition of these conflicts, the *salvation*, are expressed in the ideas of heaven and reunion with God. The machinery of this abolition, *i. e.*, the reunion of the divided, the conversion of the different into the same,—is the furniture of religious symbols and ceremonials—myths, baptisms, sacraments, prayers, and sacrifices: and all these are at the same time instruments and expressions of desires. God is literally "the conservation of values."[5] "God's life in eternity," writes Aristotle, who here dominates the earlier tradition, "is that which we enjoy in our best moments, but are unable to possess permanently: its very being is delight. And as actual being is delight, so the various functions of waking, perceiving, thinking, are to us the pleasantest parts of our life. Perfect and absolute thought is of perfect and absolute things. . . . And what God possesses is just this absolute vision of perfection."[6] Even the most somnambulistic of the transcendental philosophies has repeated, not improved upon Aristotle. "The highest conceptions that I get from experience of what goodness and beauty are," writes Royce, "the noblest life that I can imagine, the completest blessedness that I can think of, all these are but faint suggestions of a truth that is infinitely realized in the Divine, that knows all truth. Whatever perfection there is suggested in these things, that he must fully know and experience."

What religion demands of these ultimate value-forms is that *they shall work* and its life as an institution depends upon making them work. Christian science becomes a refuge from the failure of science, magic from mechanism, and by means of them and their kind, blissful immortality, complete self-fulfilment, is to be attained—after death, There is a happy life beyond, but it is beyond life. In fact, although religion confuses value and existence, it localizes the great value-forms outside of existence. Its history is on the one side a history of the retreat and decimation of the gods *from* the world, a movement from animism and pluralism to transcendentalism and monism; and on the other, of an elaboration and extension of institutional devices

[5] *Cf.* my paper, "Is Belief Essential in Religion?" *Int. Jour. Ethics,* October, 1910.

[6] "Metaphysics," Book Lambda.

by which the saving value-forms are to be made and kept operative *in* the world. In so far forth, religion has been an art and its association with the arts has been notorious. But in so far as it has tried to make values operative without making them existent, it has been a *magic*. It has ignored the actual causes and nature and history of things, and has substituted for them non-existent desirable causes, ultimately deducible to a single, eternal, beneficent spirit, omnipotent and free. To convert these into existences, an operation which is the obvious intent of much contemporary thinking in religion,[7] it must however give up the assumption that they already exist *qua* spirit. But when religion gives up that assumption, religion gives up the ghost.

In religion, hence, value is non-existent and is said to exist. In art existence is without value and is converted into value. Art makes actual existences over into actual values; religion makes actual values over into hypothetical existences.

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REVIEWS AND ABSTRACTS OF LITERATURE

Probleme der Sozialphilosophie. ROBERT MICHELS. Leipzig und Berlin: B. G. Teubner. 1914. Pp. 208.

The author's purpose as announced in the foreword of this little volume is twofold, namely, to emphasize that social problems still exist in spite of the tomes written upon them, and incidentally to throw light upon their solutions without attempting an exhaustive treatment. With this end in view he has discussed the following topics: cooperation, eugenics, caste, progress, coquetry, the proletariat, the future of the nobility, the international bourgeoisie and the relations of economics to politics.

On the whole the author has accomplished his purpose. He has given us a series of interesting discussions in which, however, he has allowed himself the greatest freedom of method, due to the fact, perhaps, that he intends to stimulate and suggest rather than to offer final results. His thought is needlessly obscured at times by long and involved sentences where subject and predicate are separated by fifty and sixty words. Some sentences, covering the better part of a page, give the impression that the writer began and doggedly continued them until he had written himself dry on that particular phase of his thought. Thought and style are good illustrations of the proverbially German *Mangel an Formsinn.*

Undoubtedly the chief attraction of the book is its freshness and concreteness. *Sachlichkeit* is the dominant characteristic of the writer's

[7] *Cf.* R. B. Perry, "The Moral Economy"; E. S. Ames, "The Psychology of Religious Experience"; J. H. Leuba, "A Psychological Study of Religion."

thought. The work, therefore, is strikingly free from those theoretical prepossessions which often give to books of this kind an atmosphere of unreality. Loyalty to facts is perhaps responsible for what will appear to many a weakness of the work, namely, the hesitating and tentative, not to say negative, character of many of its conclusions. In the discussion of progress, for example, after marshaling the facts in two chapters to show that progress is relative and that *Fortschritt schlechtlin* (an indefinable term) does not exist, Michels concludes that "progress" is a meaningless word which should be banished from "the terminology of scholars" and that all investigation of the problem of moral progress is a "useless waste of time." This is discouraging and, we feel somehow, at variance with the *gesunden Menschenverstand.* We remind ourselves, however, of Hume's whimsical confession of the fundamental inconsistency between his sceptical conclusions and human life, and take courage. Two things, apparently, force the writer to these negative conclusions, namely, the complex and contradictory nature of the facts and his inability to apply to them a scientific (statistical) method. "Morals hardly admit of numerical measurement." True, but it does not follow from this that we must write *ignoramus et ignorabimus* as the last word on the question of moral progress.

The writer's relative conclusions as to progress are made the basis for a remarkable justification of war. He asserts "war is irrational, but not immoral"—a frank repudiation of the Socratic dictum that insight is of the very essence of right action. War, furthermore, is absolutely indispensable to the unfolding of national life. Situations arise when "the necessities of national expansion shatter all bonds of reason and ethics. Only weak and slavish peoples are just and dream of international brotherly love" (p. 77). It would be hard to find a more brutal justification of the mailed fist of militarism.

A most interesting chapter is devoted to the problem of cooperation. After tracing the rise of the various forms of cooperation the writer concludes that the age of individualism in business is definitely ended. He is not persuaded, however, that cooperation will prove the solution of all social problems. It carries within its own bosom the seeds of disintegration. For cooperation is an eternal *Janus Bifrons.* It aims ostensibly at the solidarity of all mankind and yet it owes its origin and growth to the negation of solidarity in that it lives only by virtue of the conflicts and differences of interests between social groups. Only one field of human endeavor admits of complete cooperation, namely, science.

Eugenics deals with the fundamental problem of the social sciences, which Michels states as follows: "whether the undeniable inferiority of the lower classes rests upon a firm anthropological basis of which class distinctions are only the result, or whether the subordinated 'race' is only a phenomenon resulting from economic conditions, that is, whether the inferiority of human material of the propertyless classes is to be derived from wages and living conditions" (46). The problem of eugenics and that of the proletariat are, according to Michels, closely related, but he suggests no solution for either. He closes his discussion of the proletariat

with this question: "Is this mentally and physically defective proletariat, as he appears to us in the study of politico-social anthropology, ripe for his emancipation as a class, and, if we must answer this question in the negative, what have we to do in order to make him ripe?"

The nobility are in the judgment of the author a permanent element in European society owing to the fact that they are constantly drawing new blood from the bourgeoisie. The chapter on the international bourgeoisie, containing an interesting comparison of this class in Germany, Italy, and America, closes with the following statements which indicate the writer's method and attitude throughout the book. "Our scientific task, the task of social philosophy, or, if you will, of sociology, is not mainly to point out ends, . . . but for the present solely to clarify. . . . It does not consist in determining what is good or what is bad in arrangement, but in establishing what the actual relations are and whither the unfolding tendencies lead" (p. 188). The writer has essayed, therefore, to discuss the problems of social philosophy with no well-defined philosophy of his own. In this fact is to be found the strength as well as the weakness of the book.

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Dante and Aquinas. PHILIP W. WICKSTEED. London and New York: E. P. Dutton and Company. 1913. Pp. ix + 271.

There is much truth as well as aptness in the generalization which the author of this volume advances in his preface: "Aquinas regards the whole range of human experience and activities as the collecting ground for illustrations of Christian truth, and Dante regards Christian truth as the interpreting and inspiring force that makes all human life live." This is a more penetrating view than the one commonly adopted, according to which the "Commedia" is "Aquinas in verse." Moreover, the promise, also contained in the preface, to give "a disinterested and popular treatment of the subject, free from all propagandist and polemical intention" is at once refreshing and inviting.

On the whole, the learned author has redeemed this promise with praiseworthy thoroughness. It is safe to say that even the critic whose propagandist and polemical intention is in evidence, will agree with the following estimate: "My own impression is that we are on much safer ground when we use the works of Aquinas as the best means of introducing us into the mental and theological atmosphere that Dante breathed, than when we assume, without special evidence, that he had actually steeped himself in the study of them and knew their exact teaching upon every point" (p. 136). In this way it was possible for poetry "to glide on the wings of theology" and not be compelled to "dance in the shackles" of theological definitions and proofs. There are, undoubtedly, points of divergency between the philosophy and theology of Aquinas and the doctrine of the "Commedia," in spite of the universally accepted fact that the groundwork of the poem is the Thomistic teaching. However, one may hesitate in accepting as an instance of divergence the doctrine

of Parad. VII., 133–138, and Parad. XXIX., 34, in regard to the separate creation and existence of formless matter, particularly as the author himself admits that this special feature of Dante's teaching stands apart from the organic and constructive movements of the poet's mind (p. 150).

It is true, the doctrine of St. Thomas and of the scholastics generally in regard to formless matter is so subtly technical that even a profound student of the text of the "Summa" may be pardoned if he fails to distinguish, as the school did: (1) *Pure Actuality,* meaning absolute perfection, the infinite, and *Pure Actuality,* meaning relatively perfect immaterial beings, the angels, and (2) *Formless Matter* created so as to coexist with the first created substantial forms, and *Formless Matter* created to exist without any form and pre-existing (*quoad tempus*) before the forms to which it was united. These, as has been said, are subtle points of doctrine. The same excuse, however, can not be adduced in the case of the account which the author gives (p. 73) of the Church's attitude toward the introduction of Aristotelian philosophy in the first half of the thirteenth century. It is now an oft-told tale. And yet, it seems, it must be told again, with emphasis on the fact that there were two Aristotles under consideration, the Arabian and the Greek. Again, the "relation of reason to revelation" is admirably described (as taught by St. Thomas), up to a certain point (pp. 96 ff.), the point, namely, at which the author apparently confounds the task of the Christian philosopher with that of the Christian theologian (p. 103). Finally, it is less than justice to that much-misrepresented genius, John the Scot, to say that his assertion that authority must rest on reason "amounts to a tacit exclusion of a really authoritative revelation" (p. 43).

Notwithstanding the exception taken to these few points of detail, the volume on "Dante and Aquinas" is heartily recommended to all students of medieval philosophy as well as to those who are striving to get a clear understanding of the "Divina Commedia." It was written with this twofold purpose in view, and it will, unquestionably, accomplish both. Especially successful is the attempt (p. 112 ff.) to describe "the characteristic qualities of Thomas's mind."

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. November, 1913. *Les Fondements Objectifs de la Notion d'Electron* (pp. 449–478): A. REY. – A discussion of the hypothesis of the invariability of the elementary electric charge, with particular reference, in this first article of the series, to electrolysis, cathode rays, etc. *Le Monde comme Volonté de Représentation* (pp. 479–510): JULES DE GAULTIER. – An account of a phenomenalistic (illusionistic) metaphysics, which, "instead of a moral purpose that has shown itself to be self-contradictory," attributes to existence, "according to a

new hypothesis, an esthetic and spectacular purpose, a will to representation." *Remarques sur la Théorie Logique du Jugement* (pp. 511–525): EDMOND GOBLOT. – With reference to quality, the admission of a third kind of judgment, besides the affirmative and the negative judgments, would involve the destruction of the principle of contradiction; "the affirmative judgment is always an affirmation, the negative judgment is the negation of an attribute that is always positive." *Analyses et Competes Rendus.* Leslie J. Walker, *Theories of Knowledge, Absolutism, Pragmatism, Realism:* A. BENJON. Montes, *Precursores de la Ciencia Penal en Espana:* GASTON RICHARD. Garcia Lopez, *Questions Pénales:* GASTON RICHARD. Picece, *Monismo e Scienza Giuridico-sociale:* GASTON RICHARD. Alimena, *Note Filosofiche d'un Criminalista:* GASTON RICHARD. Vincenzo Miceli, *Lezioni di Filosofia del Diritto:* GASTON RICHARD. Del Vecchio, *Il Concetto del Diritto:* GASTON RICHARD. Pagano, *L'individuo nell Ètica e nel Diritto:* GASTON RICHARD. G. A. Colozza, *Il Metodo Attivo nell "Emilio":* J. PÉRÈS. P. Hachet-Souplet, *De l'Animal à l'Enfant:* J. M. LAHY. Marius Latour, *Premiers Principes d'une Théorie Générale des Émotions:* L. DUGAS. Dr. Georges Génil-Perrin, *Histoire des Origines et de l'Evolution de l'Idée de Dégénérescence en Médecine Mentale:* PH. CHASLIN. Gudmundur Finnbogason, *Den Sympatiske Forstaælse:* ALFRED BLANET. *Notices Bibliographiques. Revue des Périodiques.*

Lee, Vernon. The Beautiful. Cambridge: University Press. New York: G. P. Putnam's Sons. 1913. Pp. viii + 155.

Mayo, Marion J. The Mental Capacity of the American Negro. Archives of Psychology, No. 28. New York: The Science Press. 1913. Pp. 70.

NOTES AND NEWS

THE Section of Anthropology and Psychology of the New York Academy of Sciences met in conjunction with the New York branch of the American Psychological Association at Columbia University, on April 27. The following papers were read: "A Study of Appetite," Garry C. Myers; "Equivalence of Repetitions for Recall and Recognition," Edith F. Mulhall; "Studies in Recognition," W. S. Monroe; "A Study of Bagobo Ceremonials, Magic, and Myth," Laura Watson Benedict; "Is There Such a Thing as General Judicial Capacity?", Mary Ross; "Individual Differences in Judicial Capacity," Lillian Walton; "Some Etiological Factors of Mental Deficiency," Max G. Schlapp; "Sex Differences in the Solution of Mechanical Puzzles," H. A. Ruger.

THE First Congress of Mathematical Philosophy met in Paris at the Sorbonne, April 6 to 8, inclusive. The conference was given under the auspices of the editors of the *Mathematical Encyclopedia* and the French Society of Philosophy. The opening address was delivered by Emile Boutroux, President of the Congress.

PROFESSOR NORMAN WILDE, head of the department of philosophy and psychology at the University of Minnesota, has been granted a year's leave of absence. Professor David Swenson will act as chairman of the department during Professor Wilde's absence.